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Docket No.: MOH-P010057

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**MAIL STOP: APPEAL BRIEF PATENTS**

By: 

Date: February 16, 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

Applic. No.	:	10/715,069	Confirmation No.:	3307
Inventor	:	Bernhard Stellwag, et al.		
Filed	:	November 17, 2003		
Title	:	Method for Protecting Components of a Primary System of a Boiling Water Reactor in particular from Stress Corrosion Cracking		
TC/A.U.	:	3663		
Examiner	:	Johannes Mondt		
Customer No.	:	24131		

Hon. Commissioner for Patents  
Alexandria, VA 22313-1450

## **BRIEF ON APPEAL**

Sir:

This is an appeal from the final rejection in the Office action dated July 14, 2006,  
finally rejecting claims 1, 3-4 and 6-9.

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01 FC:1402	500.00 OP
02 FC:1252	450.00 OP

Appellants submit this *Brief on Appeal* in triplicate, including payment in the amount of \$500.00 to cover the fee for filing the *Brief on Appeal*.

Real Party in Interest:

This application is assigned to Framtome ANP GmbH of Erlangen, Germany and ENBW Kraftwerke AG of Phillipsburg, Germany. The assignment will be submitted for recordation upon the termination of this appeal.

Related Appeals and Interferences:

No related appeals or interference proceedings are currently pending which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

Status of Claims:

Claims 1, 3-4 and 6-9 are rejected and are under appeal. Claims 2 and 5 have been cancelled.

Status of Amendments:

No claims were amended after the *Final Office Action*. A *Notice of Appeal* was filed on October 16, 2006.

Summary of the Claimed Subject Matter:

According to 37 CFR § 41.37(c)(1)(v) Summary of claimed Subject Matter, only the subject matter defined in each of the appealed independent claims is to be explained by page and line number of the Specification.

Regarding the dependent claims, it is only the means plus function clauses which need to be explained.

Claim 1 is the only independent claim and there are no means plus function clauses in the appealed claims.

In the following concise explanation, the wording of claim 1 is bolded and the concise explanation is indented.

Independent claim 1 calls for:

**A method for protecting components of a primary system of boiling water reactor having a pressure vessel and a feedwater line opening out into the pressure vessel, the method which comprises:**

**Providing an alcohol selected from the group consisting of methanol, ethanol, and propanol;**

The alcohol selection is identified on page 8, lines 4-5.

**continuously feeding the alcohol into a primary coolant to maintain an alcohol concentration of from 0.1 to less than 10  $\mu\text{mol/kg}$  in a downcomer,**

Continuously feeding is identified on page 11, lines 12-14.  
Alcohol concentration identified on page 7, lines 22-24.  
Downcomer identified on page 10, lines 6-7.

**the downcomer extending downward at an opening of the feedwater line,**

The downcomer extending downward at an opening of the feedwater line is identified on page 6, lines 8-9.

**with surfaces of the components being covered by no more than a native oxide layer.**

Native oxide layer is identified on page 6, line 9-10.

**Grounds of Rejection to be Reviewed on Appeal**

1. Whether the recitation of the term “bright” in claim 8 renders the claim indefinite under 35 USC 112, second paragraph.
2. Whether or not claims 1, 3-4, and 6-9 are obvious over Hettiarachchi (US Patent No. 5,818,893, hereinafter, the '893 patent) under 35 U.S.C. § 103.

Argument:

**I. OBJECTION TO DRAWINGS**

Appellant notes that the Final Office Action has an objection to the Drawing of record under 37 CFR § 1.83(a). Appellant respectfully points out that this is the first instance where the drawings have been objected to. Because the current Office Action is FINAL, and Appellant's response to the FINAL Action is this Appeal Brief, Appellant respectfully requests the replacement drawing sheet submitted herewith be entered and made of record. Alternatively, if the Board deems it improper to enter the Replacement sheet at this time, applicant respectfully requests the issue as to the drawing objection be held in abeyance pending resolution of the subject Appeal. Appellant will amend the specification after the present Appeal is decided in order to recite the elements in the Replacement Drawing.

**II. OBJECTION TO CLAIM 7**

The Office Action has an objection to claim 7 based on the alleged informality regarding recitation of "component surfaces" and has requested the phrase be replaced by "surfaces of the components." Appellant respectfully points out that this is the first instance where the language of claim 7 has been objected. Because the current Office Action is FINAL, and applicant's response to the FINAL Action is this Appeal Brief, Appellant respectfully requests the issue regarding this objection be held in abeyance pending resolution of the current Appeal. Appellant will amend the claim accordingly once the Appeal process has concluded.

### III. CLAIM 8 REJECTED UNDER 35 USC 112, SECOND PARAGRAPH

Appellant asserts that the classification of a metal as "bright" is well known in the art. The term is defined in the specification as a metal surface being covered only by a native oxide layer. There is no requisite degree needed to understand the term. Appellant is not referring to bright as the visual luminescence but merely from a metallurgical chemistry analysis of a surface having native oxide on the surface and excluding all other substances from the surface thereof. Appellant respectfully bases this position on the MPEP 2111.01 (IV.):

An applicant is entitled to be his or her own lexicographer and may rebut the presumption that claim terms are to be given their ordinary and customary meaning by clearly setting forth a definition of the term that is different from its ordinary and customary meaning(s). See *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) (inventor may define specific terms used to describe invention, but must do so "with reasonable clarity, deliberateness, and precision" and, if done, must "'set out his uncommon definition in some manner within the patent disclosure' so as to give one of ordinary skill in the art notice of the change" in meaning) (quoting *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1387-88, 21 USPQ2d 1383, 1386 (Fed. Cir. 1992)). Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999).

Appellant further points out that the term bright, as used in the subject application may differ from the common understanding, but is clearly defined in the specification, as required by the MPEP, and common to those of ordinary skill in the art. Appellant respectfully requests withdrawal of this rejection.

#### **IV. REJECTIONS OF CLAIMS 1, 3-4, AND 6-9 UNDER 35 USC 103(a)**

For the following reasons the subject application is not obvious over the '893

Patent:

1. The '893 Patent when viewed as a whole teaches away from the subject application.
2. The calculations set forth in the instant Office Action, and previous Office Actions, do not accurately recite the alcohol concentration that they purport to recite.

Appellant respectfully traverses the rejection under 35 U.S.C. 103(a) based on the following comparison of the subject application and the '893 reference. The subject invention as now claimed, requires in claim 1:

- Providing an alcohol that is oxidizable under operating conditions of the primary system;
- Feeding the alcohol into a primary coolant to establish an alcohol concentration from 0.1 to less than 10 micromoles per kilogram in a downcomer.

This claimed process is distinct from the cited '893 reference because:

1. The '893 reference discloses palladium concentrations and does not have recitation relating to the concentration of alcohol.
2. In column 9, lines 50-67, of the '893 reference, there is ambiguity relating to the method of dilution. Specifically the patent recites, "The palladium acetylacetonate injection solution was prepared by dissolving 52.6 mg of palladium acetylacetonate powder in 40 ml of ethanol. The ethanol

solution is then diluted with water.” The ‘893 specification does not say to what extent the solution is diluted with water. After solution 10 milliliters of ethanol are added to the solution. (Again, the specification **does not** specifically say to what solution 10 milliliters of ethanol are added). “This is then diluted to a volume of 1 liter.” The ‘893 disclosure is ambiguous, it is presumed that this dilution is with water. The ‘893 Patent goes on to say, “Alternatively, a water-based suspension can be formed, without using ethanol...” Lines 66 and 67 refer to a palladium concentration at approximately 50 parts per billion. Presumably as it says in the ‘893 reference the solution entering the autoclave, so this solution has a concentration **before** (*emphasis added*) it is introduced into the system, of 50 parts per billion. The ‘893 reference **does not** specify the concentration of any components once they have entered the reaction system. Although, the ‘893 Patent recites, in column 11, lines 23-25, the palladium concentration in the reactor water is preferably in a range of 1 to 1000 ppb, there is further ambiguity because in view of the statement above, where the specification clearly recites “a water-based suspension can be formed, without using ethanol” there is no recitation as to the concentration of alcohol **if any** in their system.

Appellant asserts that the ambiguities do not teach or suggest the method of the subject application. Furthermore, Appellant asserts that the reading of the ‘893 Patent as a whole, establishes both that there is a one initial palladium concentration and no additional components added after the initial introduction of the palladium solution. Applicant respectfully points out that column 6, lines 53-56,



recite "in the present process only the compound solution or suspension is injected into the high temperature water. **No reducing agents** (emphasis added), acids, and basis are added." This is contradistinction to the subject application, which claims continuous feeding into the system, and recites at the end of paragraph numbered [0024], it is necessary to operate with a lower oxygen content with an **excess** (emphasis added) of reducing agent." Appellant asserts that a teaching in the '893 Patent stating that **no reducing agents are added** would not render obvious an application that explicitly recites a desire to use in **excess of a reducing agent**. The subject application defines alcohol as being a suitable reducing agent. It is precisely this conflict that renders the '893 application unable to be used to support an obviousness rejection because it teaches away from the subject application.

Appellant asserts that because '893 teaches away from the subject application, it cannot properly be used as prior art in a rejection under 35 USC 103(a). In order to use a reference as prior art, the MPEP 2141.02 and applicable case law provide "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). Appellant asserts that the '893 reference, read in its entirety, as stated above, teaches a specific amount of alcohol introduced into Boiling Water Reactor (BWR) and does not allow for additional amounts to be added, which teaches away from the subject application allowing continuous addition and excess amounts of alcohol. The teaching away disclosure in the '893 patent cannot be ignored, and the '893 patent cannot be used to render the subject application obvious.

Appellant further asserts that the Office recognize established case law which characterized most chemical reactions and physiological activity as “unpredictable” *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). It is a well-established tenet in patent law that the unpredictable nature of the chemical arts requires a higher standard to show obviousness.

Any disclosures used to establish obviousness must contain the requisite teaching, suggestion, or motivation to modify. Appellant respectfully asserts there is no teaching or suggestion found in the '893 reference, nor is there any motivation to modify to arrive at the subject invention as now claimed which means a rejection under 35 USC 103(a) cannot be properly applied.

Appellant further asserts the calculation relied upon in the instant Office Action does not accurately depict concentration in a reaction system. Specifically, the calculation relied upon in the instant Office Action does not accurately depict alcohol concentration in a BWR. The Office Action presumes incorrectly the concentration of ethanol in the test solution of the '893 Patent in relation to the entirety of volume in the BWR system. As discussed above, the palladium acetylacetonate injection solution described in column 9 of the '893 Patent does not clearly define its preparation. It further appears that the recitation of palladium concentration is the concentration in that test solution, and does not take into account any concentrations once added to a reaction vessel. The adding of a solution to the reactor vessel will, in fact, dilute the amount of components present. Although the '893 Patent recites in column 11, line 24, a preferable range of 1 to

1000 ppb for palladium concentration in the reactor water, there is insufficient disclosure or description to conclusively declare that alcohol will be present in the BWR system and its entirety in the range of 0.1 to 10 micromole/kg as claimed in the subject application.

Because the '893 disclosure teaches:

1. Palladium concentration, and not alcohol concentration;
2. A water-based suspension can be formed, without using ethanol; and
3. No teaching or suggestion as to concentration alcohol (if any) after the Palladium solution is introduced into the BWR


Appellant respectfully asserts that the '893 does not have the requisite teaching or suggestion to render the subject application obvious. In view of the failure of the '893 Patent to teach or suggest the subject application as now claimed, Appellant respectfully asserts that the rejection under 35 U.S.C. 103(a) cannot be properly applied.

The honorable Board is therefore respectfully urged to reverse the final rejection of the Primary Examiner.

Petition for extension is herewith made. The extension fee for response within a period of two months pursuant to Section 1.136(a) in the amount of \$450.00 in accordance with Section 1.17 is enclosed herewith.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account No. 12-1099 of Lerner Greenberg Sterner LLP.

Respectfully submitted,



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LAG/sms

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Claims Appendix:

1. A method for protecting components of a primary system of boiling water reactor having a pressure vessel and a feedwater line opening out into the pressure vessel, the method which comprises:

Providing an alcohol selected from the group consisting of methanol, ethanol, and propanol;

continuously feeding the alcohol into a primary coolant to maintain an alcohol concentration of from 0.1 to less than 10  $\mu\text{mol/kg}$  in a downcomer, the downcomer extending downward at an opening of the feedwater line, with surfaces of the components being covered by no more than a native oxide layer.

2. Cancelled

3. The method according to claim 1, which comprises protecting the components against stress corrosion cracking.

4. The method according to claim 1, which comprises feeding the alcohol into a condensate or feedwater system and carrying the alcohol into a condensate or feedwater system and carrying the alcohol into the primary system with the feedwater.

5. Cancelled

6. The method according to claim 1, which comprises doping the component surfaces with a precious metal
7. The method according to claim 6, wherein the component surfaces are doped with platinum.
8. The method according to claim 1, wherein the surfaces of the components are bright.
9. The method according to claim 1, wherein the surfaces of the components are covered by a native oxide layer.

**Evidence Appendix:**

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or any other evidence has been entered by the Examiner and relied upon by appellant in the appeal.

Related Proceedings Appendix:

No prior or pending appeals, interferences or judicial proceedings are in existence which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal. Accordingly, no copies of decisions rendered by a court or the Board are available.





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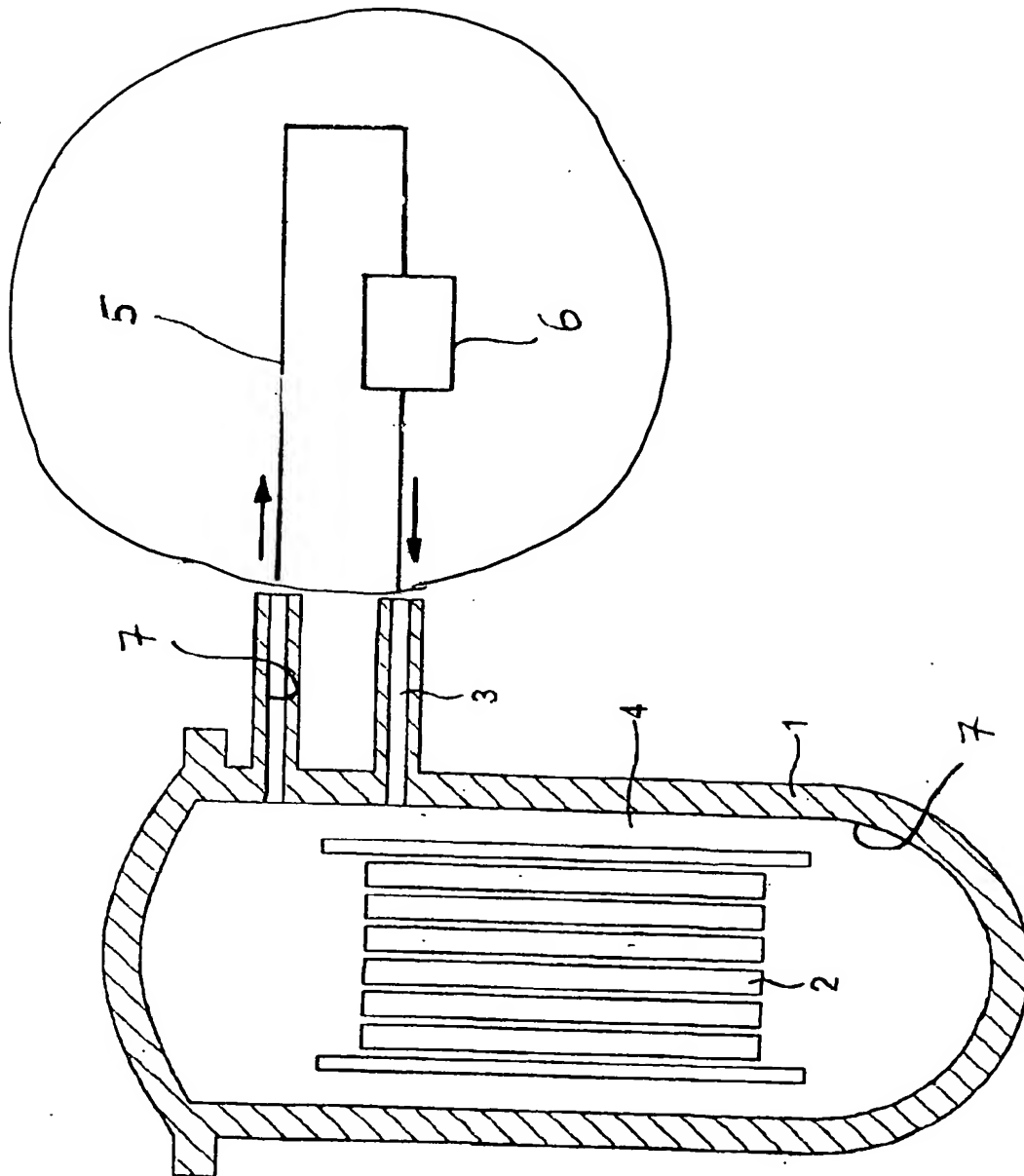
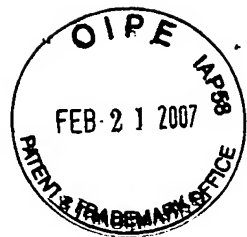


Fig. 1



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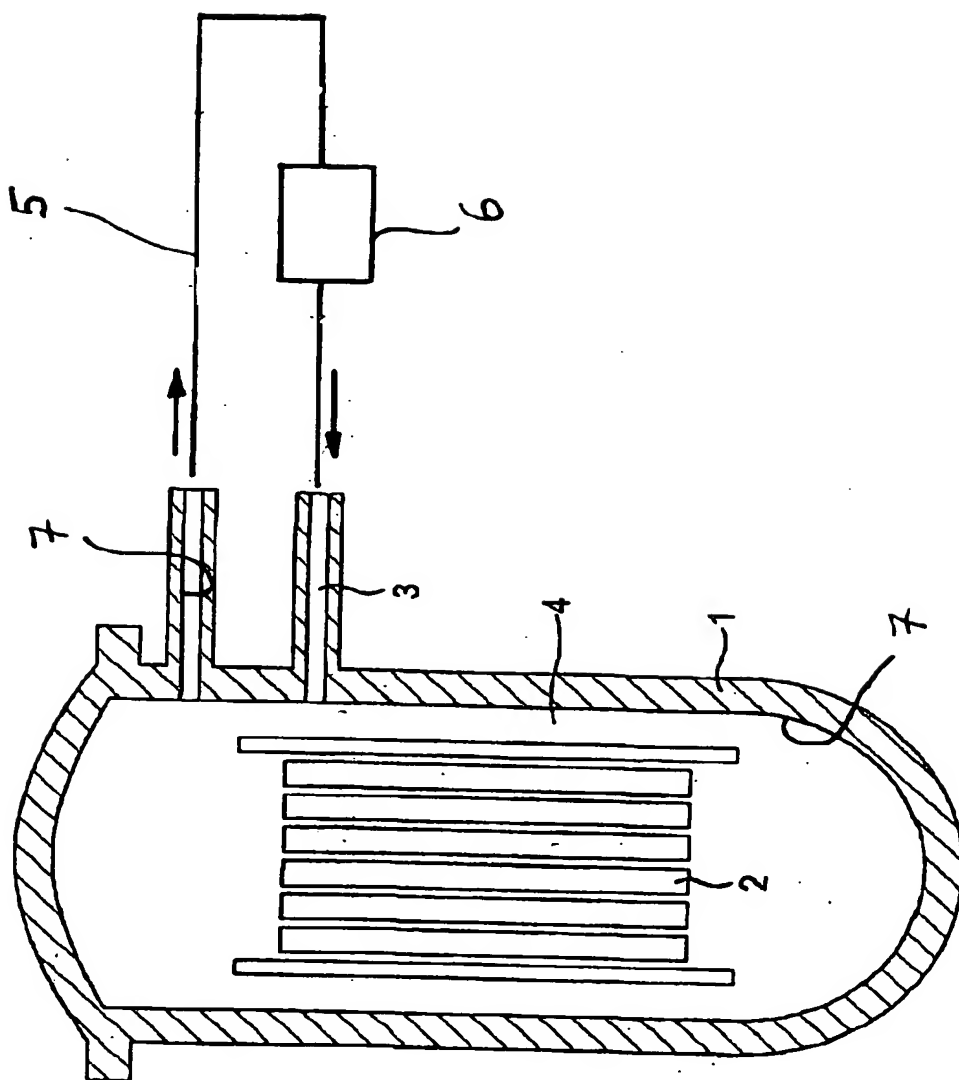


Fig. 1